



PERSpectives

Newsletter of the Pacific Estuarine Research Society

Spring 2013

PRESIDENT'S REPORT

Since the last newsletter, it has been busy on the Presidential front.

Following the very successful PERS Annual Meeting at the Shannon Point Marine Station in Anacortes in April 2012, I represented PERS at the California Estuarine Research Society (CAERS) meeting at the California State University in Long Beach in September. CAERSians celebrated their 10th anniversary with great presentations illustrating how mutually beneficial a joint meeting would be. In its formative years, PERS included Californian scientists and would be something to encourage for future meetings. Both societies have been trying to forge closer ties and it was agreed that a joint meeting should be held in 2014. One of the challenges is selecting a meeting location that is easily accessible. A site in northern California, such as Bogeda Marine Laboratory is relatively close to the PERS membership, especially in Oregon, but presents challenging travel arrangements. In October, the CERF Fall Governing Board met in Baltimore, MD.



PERS President Gary Williams joined with other Affiliate Societies on the CERF Governing Board in Baltimore, MD.

The meeting included an update by Steve Weisberg, Chair, on planning for CERF 2013, "*Toward Resilient Coasts and Estuaries: Science for Sustainable Solutions*" to be held in San Diego 3-7, November. PERSian Jan Newton is Vice-Chair, and it promises to be a "not-to-be missed" event!

In November, I made a presentation on invasive *Spartina* at the historic first CERF International Meeting of the Americas in Mar del Plata, Argentina. The conference was terrific and attended by estuarine and coastal scientists from a dozen countries. The field trips to Mar Chiquita Marine Reserve provided an opportunity to observe *Spartina densiflora* marshes, where they should be, visit some beautiful coastal habitats, and observe resident

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MARCH 2013

Special article of interest:

- * President's Report
- * PERS Meeting
- * Tsunami Debris

PERS 2013 MEETING

10 Reasons to Come to the PERS 36th Annual Meeting in Delta BC April 4-7, 2013

1. Support PERS to keep it strong and healthy so we can do it again next year in WA or OR.
2. Catch a great presentation about sea level rise and estuaries from Dr. John Rybczyk, our banquet keynote speaker.
3. Sample BC beer and wine at our Thursday night mixer at the Riverhouse Pub in Delta
4. Visit Delta BC to see Boundary Bay salt marshes, eelgrass, mudflats and all the critters that will be passing though April 4-7. Millions of shorebirds and waterfowl can't be wrong!
5. The meeting registration is a good deal with food, drink and lots of interesting, passionate estuarine "aficionados" to mingle with.

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CERF CORNER

Under the fatherly guidance of President Walter Boynton, CERF continues to serve us well as our parent society. Mark Wolf-Armstrong, Executive Director of CERF, is working diligently to further CERF's organization. With Mark being located in Twisp, he is not far away from PERS estuaries and coasts. Some of the Boards initiatives that will be of interest to PERS is provided below.



Just Cebrian listens to CERF President Walter Boynton on the Mar Chiquita beach during CERF 2012 field trip.

CERF 2013 in San Diego, CA

Planning is well underway for the 2013 CERF International Conference, "**Toward Resilient Coasts and Estuaries, Science for Sustainable Solutions**" to be held November 3-7, 2012 in San Diego, CA. Registration and call for abstracts opens 15 March 2013 with abstract deadline

closing June 1, 2013 and early bird registration closing October 3, 2013. Check out the CERF website or February newsletter for more details. I am planning a session on "*Incorporating Science into Sustainable Port Development: Fraser River Estuary and other Case Studies*"

New CERF Book Published; New CERF Journal Considered

An important feature of CERF is the publication of the scientific journal *Estuaries and Coasts* and a new five year contract has been completed. The 2nd edition of the book *Estuarine Ecology* is now published and available for purchase. An interesting proposal from the Publications Committee is under consideration to publish a new CERF journal, *Estuarine and Coastal Applications*. The new journal would be more focused on providing support for environmental management and decision making or more applied articles.

CERF Values

The CERF Mission and Values Statement has been refined and published. CERF has carefully chosen seven values to guide the priorities, communications and standards of its strategic plans and activities. CERF highly values and pursues:

Knowledge/Research - the quest for knowledge that will advance our understanding of coasts and estuaries based on research of the highest caliber.

Collaboration - the power of scientific collaboration to accelerate and advance our knowledge, methods and models in science.

Integrity/Ethics - integrity beyond reproach and highest ethical standards as fundamental to both science and the Federation's activities.

Relevance /Impact – relevance and impact of member's work and activities of the Federation as integral to providing for the future of the planet.

Education - the education of its members, the whole scientific community, students at all levels in their educational pursuits, the general public, decision-makers and the media.

Synthesis/Integration – the synthesis of the best available science and the integration of this understanding into the broader knowledge of the world around us.

Outreach – engagement with the broader scientific community to foster deeper scientific understanding and communication of scientific knowledge to the general public, the media, public officials, and other decision makers.

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Critters. Check out the CERF February Newsletter for more details.



Mark Wolf-Armstrong and partner Maggie in Argentine Mar Chiquita Bioreserve salt marsh.

To make the most of the South American experience, I continued south to Ushuaia for a cruise of the Antarctic Peninsula, which was summarized in PERS News in the recently published winter CERF newsletter. Note that all travel costs were covered by corporate sponsorship.

Future plans include travelling to the spring CERF Governing Board meeting to be hosted by CERF's President Elect, Ken Heck, at the Dauphin Island Sea Lab in Alabama in late April. My term as the PERS representative will conclude following the CERF International Conference in San Diego, California, and I will hand over the CERF governing board responsibilities to our President Elect, Tony D'Andrea. Tony will take over PERS President at our PERS Annual Meeting in 2014.

In between the travelling I have been attending to PERS business including providing PERS News reports to CERF newsletters, overseeing PERS insurance through CERF and other PERS administration, and working with the other Affiliate Societies in providing PERS input to Mark-Wolf Armstrong CERF executive director and the CERF Governing Board. I am fortunate to be located close to our secretary/Treasurer, Jeannie Gilbert, so that we can meet face to face, and more recently communicate using Skype. Jeannie's long term commitment and service to PERS continues to be a valuable resource to the society and its executive.

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5. Show our meeting sponsors what PERS is all about and so they can see how their money was spent.
7. Find out what our PERS students are up to...
8. Recharge you estuarine ethic.
9. The BC PERSians want to show you a good time.
10. Join your fellow PERSians in Delta, BC for our 36th annual celebration of the latest in estuarine research and management.

STUDENT PROFILES

We are profiling several students in this issue so look for more of these throughout, some of them will be presenting at PERS 2013. If you are a student or have a student in your lab please send your profiles to Gary and he will see they are included in future issues of the newsletter.

Student Profile #1— Aaron David

Foraging and Growth Performance of Juvenile Chinook Salmon (*Oncorhynchus tshawytscha*) in a Restoring Salt Marsh

Aaron David is a NSF fellow and second year MS student at the University of Washington where he is working with Si Simenstad. For his thesis research Aaron is exploring the effects of dike-removal restoration and urbanization on foraging and growth opportunities for juvenile salmon in the estuarine environment. Currently Aaron is analyzing the data from a collaborative project with the Nisqually Indian Tribe and US Geological Survey that is evaluating a large dike-removal project within the Nisqually River estuary. Aaron plans to present results from the Nisqually study at the upcoming PERS meeting in Tsawwassen, BC.

Student Profile #2— Emily Howe

Estuarine food-web relationships

Emily Howe, the former PERS student representative, received her doctorate degree from the School of Aquatic and Fishery Sciences at the University of Washington in December 2012.

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Her dissertation, entitled "Detrital shadows: evaluating landscape and species effects on detritus-based food web connectivity in Pacific Northwest estuaries", documented that fluvial forcing and consumer feeding mode strongly effect the strength and spatial scale at which food web relationships occur across estuarine landscapes. For those interested, her dissertation will shortly be available in pdf format on the SAFS website. Emily was recently awarded a Delta Science Fellowship to work on food web relationships in the tidal marsh ecosystems of California's Sacramento-San Joaquin River delta, and will be continuing her involvement at SAFS as a postdoctoral fellow.

Columbia River estuary research collaborations: Jesse Adams and Pascale Goertler coordinate effort in the field and collaborate a portion of their sample collections; each working on very different aspects of applied estuarine research and from different universities.

Student Profile #3— Jesse Adams

Selective predation on native zooplankton and the invasive calanoid copepod, *Pseudodiaptomus forbesi* in the lower Columbia River estuary

Jesse Adams is a Master's student at the School of the Environment, Washington State University, Vancouver working with Dr. Steve Bollens. His research focus concerns *Pseudodiaptomus forbesi*, a calanoid copepod from SE Asia that invaded the lower Columbia River estuary nearly 15 years ago. Able to dominate the zooplankton community at certain times of the year, the impacts of this transplanted zooplankton to the local food-web and ecosystem are largely unknown. Jesse conducted a series of experiments in 2012 focusing on predation by fish and mysid on *P. forbesi*, compared to native copepods and cladocerans. Preliminary results of these 'single predator, two prey (species)' experiments showed that some predators may select against *P. forbesi*, successfully capturing native prey more than *P. forbesi*. Further experiments in 2013 will test other prey species combinations and predators and, additionally, will include 'single predator-single prey' studies to investigate predation rates on specific species in the zooplankton community. Jesse plans to attend the upcoming

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Capital Hill Ocean Week Involvement

CERF's Public Policy Capital Hill Ocean Week (CHOW) will be occurring again this year. The objective of the initiative is to become a trusted advisor and educator about estuarine and coastal science. Susan Williams and Bob Diaz are leading the public policy planning. Several past PERS presidents served on this committee and PERS has been very supportive of this activity. The committee was leaning towards pursuing the Human Health issues topics (e.g. harmful algal blooms, seafood safety, and infectious diseases in coastal waters) at the Capital Hill briefings



CERF Governing Board Student Member at Large

The board was pleased to appoint Leanna Hefner, Rhode Island University, as the non-voting student member to the Governing Board with her term to end at the conclusion of the Boynton administration. As is the case with PERS, CERF is committed to providing a mentoring and supportive society to students and this action solidifies this commitment and hopefully makes CERF more relevant to future estuarine and coastal scientists. In fact, at the fall meeting in Baltimore, I put forward a successful motion to add a student-member-at-large to the Governing Board. This will require amending CERF's by-laws to increase the number of Members at Large from 4 to 5.

CERF 2012 Goes International

CERF's Inaugural International Conference of the Americas was held in Mar del Plata, Argentina from November 7-14, 2012. The meeting was tremendous success with estuarine and coastal scientists from 12 countries attending. See the CERF February newsletter for pictures and articles.

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CERF Governing Board Elections

Nominations are needed for President-Elect, 2 members at-large, and Secretary. As well, the Treasurer, Chris Tanner, has asked to be replaced. Note that the Treasurer is a Governing Board appointment and suggestions should be sent to Susan Williams. Board Elections and Nominations are being led by Susan Williams, Past President. Governing Board members should send nominations for the Governing Board elections and suggestions for Treasurer to Susan Williams. If any PER-Sians are interested we should send in nominations.

February 27, 2013, is deadline for nominations for members-at-large, Secretary, and President-elect.

At the Spring 2013, Board meeting, the Governing Board will approve the slate of nominees.

By May 14, 2013, candidates for office must have statements and photos submitted to CERF.

Elections are in June, 2013

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A major focus over the last few months is the planning for the 2013 PERS Annual Meeting to be held at the Delta Town and Country Inn in Delta, BC, from April 4-7. The meeting venue has been retained and meeting logistics are well underway. We have assembled an experienced team to organize the meeting and this year we are soliciting sponsors to help lessen the financial obligations to PERS. We are pleased that the Port of Metro Vancouver will be a sponsor and discussions are continuing with several corporate sponsors. Make sure you register for the meeting early and presenters are encouraged to send in their abstracts for the oral and poster presentations. PERS Annual Meetings are always a high point on many of our calendars and I look forward to great meeting in Delta.

There are a number of important matters being considered by CERF that could affect PERS. I encourage you to read CERF corner to become more knowledgeable of these issues so that we can review at the business meeting and get membership feedback. YOUR INPUT IS IMPORTANT.

Student Profiles Continued

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PERS meeting in April.

Juvenile Chinook salmon population diversity and habitat use in the Columbia River estuary

Student Profile #4— Pascale Goertler

Pascale Goertler is a second year MS student at the School of Aquatic and Fishery Sciences at the University of Washington. Her research strives to contribute to salmon management salmon by providing insight into how to target resilience by promoting population diversity when conducting restoration projects. Pascale's research addresses how juvenile Chinook population diversity is distributed within habitats, with a focus on estuarine rearing in the Columbia River estuary. She is currently working through otolith samples from two years of estuarine sampling, and with additional data from a NOAA partnership with Dr. David Teel and Dan Bottom she will be presenting her preliminary results at the 2013 PERS meeting.



Pub where the social will be on April 4, Delta, BC, opening the 36th annual PERS Meeting,

Details at www.pers-erf.org/pers2013.html

A New Wave of Japan Tsunami Marine Debris carries more Non-native Species to the Pacific Northwest



Steven S. Rumrill / Shellfish Program Leader
(Oregon Department of Fish and Wildlife)

Sudden arrival of the 66 ft Japanese floating dock in the surf zone on Agate Beach, OR last June (2012) served as a harsh wake-up call for the marine scientists and coastal resource managers that have taken on responsibility to study, assess the risk, and minimize the potential ecological damage associated with non-indigenous species attached to the drifting marine debris generated by the Tohoku earthquake and tsunami (March 2011). Advance planning efforts were well underway throughout the Pacific Northwest region to deal with arrival of the drifting debris field along the shorelines of Alaska, British Columbia, Washington, and Oregon. However, the commercial fishing dock was transported rapidly by ocean currents as it crossed nearly 5,000 miles from the Port of Misawa to Newport, and speedy transit of the large concrete and foam dock was unanticipated by the hydrodynamic models. Grounding of the dock on an Oregon beach provided an austere reminder of the terrible tragedy and loss of human lives that occurred in the aftermath of the Tohoku tsunami. Survival of the diverse communities of temperate Asian marine organisms attached to the cement dock sounded the alarm about tsunami debris as a new vector for the transport of non-native

species from northern Japan to the shorelines of North America.

Westerly winds and the winter storms of 2013 recently brought a new wave of drifting marine debris items to the shorelines of [Alaska, British Columbia, Washington, and Oregon](#). The majority of the debris items are of terrestrial origin (such as lumber from buildings and other sources, insulated building materials, Styrofoam, plastic bottles, light bulbs, industrial fluid containers, appliances, toys, etc.). These Terrestrial-Origin-Debris (TOD) items are typically colonized at sea by cosmopolitan open-ocean species (such as the pelagic gooseneck barnacle, *Lepas anatifera*), and they do not pose a significant risk for the introduction of non-native species. However, several large items of Marine-Origin-Debris (MOD) have also washed ashore over the past couple of months. These larger MOD items (including damaged boats, aquaculture buoys, ropes, netting, etc.) have been colonized by a mixture of the cosmopolitan open-ocean species, and they also carry communities of shallow-water non-native marine organisms (including seaweeds, acorn barnacles, amphipods, mussels, limpets, chitons, and bryozoans).

A second large commercial fishing dock was torn free from pilings in Misawa, Japan, by the Tohoku tsunami (March 2011), and the dock drifted ashore

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on December 18, 2012 along the rugged and remote rocky coast of Olympic National Park (Washington). The cement dock is about 65 ft long and 20 ft wide, and weighs about 185 tons. High seas and a swollen stream made reaching the dock difficult, and small group of emergency responders was able to gain access to the grounded dock on 21 December. Like the first dock in Oregon, the second grounded dock in Washington also was colonized by a mixture of cosmopolitan species and non-native marine organisms. However, the sides and bottom of the dock were battered by the rocks and surf, and the biomass of cosmopolitan and non-native marine organisms was considerably lower in comparison with the dock that arrived earlier in Oregon. Samples of the marine organisms were collected from the Washington dock by a group of scientists (Oregon State University, University of California, Williams College/Connecticut) shortly after the grounding, and a multi-agency team (from Olympic National Park, Washington Department of Fish and Wildlife, and Washington Sea Grant) returned to the dock in early Jan 2013 to complete the process to decontaminate the dock and remove the non-native species. The grounded dock is located within the Olympic Coast National Marine Sanctuary and within a designated wilderness portion of Olympic National Park. Although the dock has remained in the same general location since its arrival on the cobble beach, it is still quite mobile in the surf. Changing tides and waves continue to shift and move the dock, and it will continue to batter the coastline, damage the dock, and release foam, concrete, and steel into the marine environment. Arrangements have been made for contractors to cut the dock into manageable sections during March and April 2013, and then remove the sections from the shore by heavy-lift helicopter.

Large numbers of floats, buoys, appliances, pieces of Styrofoam, drums, containers, bottles, and other debris items have washed ashore over the winter months in Alaska. Arrival of these debris items along the vast and largely remote coastline of Alaska poses a serious problem for monitoring,

break-down of the debris items has the potential to degrade shoreline habitats, and cause harm to birds, fish and other wildlife.

Several mid-sized fiberglass skiffs or “panga-type” vessels recently washed ashore along the coasts of Vancouver Island and Oregon. Although the hull identification numbers could not be recovered from these commercial fishing vessels and their origins cannot be definitively traced back to the Tohoku tsunami, their foreign design (including skid rails and distinctive live wells at the stern of the vessel), Japanese characters on their hulls, warning labels about fueling procedures written in Japanese, and the Japanese species attached to the vessels (*i.e.*, Japanese acorn barnacle, *Megabalanus rosa*) all provide supporting evidence that they drifted across the Pacific following the tsunami. In late January 2013 an 18 ft fiberglass boat was spotted on a rocky/cobble shore near the northern tip of Vancouver Island. Staff members from Transport Canada were working to identify the vessel and to determine if it carried non-native marine organisms. And in February 2013, three more of the 20-25 ft fiberglass “panga-type” vessels washed ashore along the Oregon coast at Gleneden Beach, Horsfall Beach, and near Gearhart (5, 21, 27 February, respectively). These damaged vessels were inspected by staff members from the Oregon Department of Fish and Wildlife, and they found mixed communities of cosmopolitan species and marine organisms from Japan. Scientists from Oregon State University collected samples for the growing register of debris items that carried non-native species, and the vessels were immediately removed from the beaches by contractors working with the Oregon Parks and Recreation Department.

Although arrival of the debris items and their colonies of attached marine organisms pose a threat to native communities throughout the Pacific Northwest region, the novel transport vector for non-indigenous species also provides a unique opportunity to learn more about the movement of organisms from one side of the Pacific Ocean to another. Preliminary analysis of the species com-

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**PACIFIC
ESTUARINE
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position and condition of the organisms that have been recovered from the debris items indicates that many of the Asian species may have reproduced during the time that they were adrift in the open ocean and in the nearshore waters as they approached the coastlines of Oregon and Washington. The likelihood that the spores, gametes, larvae, and fragments of these non-native species may survive on our coasts is unknown, and marine scientists will have to keep a vigilant eye open over the coming years to make sure that they do not establish viable populations along the Pacific Northwest shores. Like other transport vectors, early detection and rapid-response actions are both critical to prevent the establishment of non-native species brought ashore attached to items set adrift by the Tohoku tsunami.

**36th Annual Meeting
Pacific Estuarine Research Society
April 4–7th, Delta, B.C.**

**Towards an Estuarine Ethic: Integration of Science and
Stewardship**

Please visit www.pers-erf.org/pers203.html

Abstract Deadline March 15th, Early Registration deadline March 18th

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